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PROLONGED INFANCY—ITS CAUSES AND ITS SIGNIFICANCE

SOME NOTES ON MR. FISKE'S THEORY

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In Selma Lagerlöf's book, "The Wonderful Adventures of Nils," there is recorded a conversation between a domestic goosey-gander and the leader of a flock of wild geese. The goosey-gander is desirous of becoming a member of the troop of wild geese and she is asked for her credentials:—

"There isn't much to tell about me," said the goosey-gander. "I was born in Skanor last spring. In the fall I was sold to Holger Nilsson of West Vemminghog, and there I have lived ever since." "You don't seem to have any pedigree to boast of," said the leader-goose; "what is it then, that makes you so high-minded that you wish to associate with wild geese?" "It may be because I want to show you wild geese that we tame ones may also be good for something," said the goosey-gander. "Yes, it would be well if you could show us that," said the leader-goose, "we have already observed how much you know about flying; but you are more skilled, perhaps, in other sports. Possibly you are strong in a swimming match?" "No, I can't boast that I am," said the goosey-gander. It seemed to him that the leader-goose had already made up her mind to send him home. So he didn't much care how he answered. "I never swam any farther than across a marl-ditch," he continued. "Then I presume you're a crack sprinter," said the goose. "I have never seen a tame goose run, nor have I ever done it myself," said the goosey-gander; and he made things appear much worse than they really were.

The poor showing of the domestic goose against her wild sisters gives rise to some speculation as to the effect of domestication, and its resulting characteristic, dependence, on the animal and the species. The most prominent form of this dependence is that of the period of human infancy, the meaning of which has been interpreted for us by John Fiske. It is with this interpretation, and an attempt to point out a

possible new significance of this period of animal life, that this paper proposes to deal.

I. MR. FISKE'S THEORY

"It will appear that it was the lengthening of infancy which ages ago gradually converted our forefathers from brute creatures into human creatures. . . . Natural selection might have gone on forever improving the breed of the highest animal in many ways, but it could never unaided have started the process of civilization or have given to man those peculiar attributes in virtue of which it has been well said that the difference between him and the highest of apes immeasurably transcends in value the difference between an ape and a blade of grass. In order to bring about that wonderful event, the Creation of Man, natural selection had to call in the aid of other agencies, and the chief of these agencies was the gradual lengthening of babyhood."

"But this steady increase in intelligence, as our forefathers began to become human, carried with it a steady prolongation of infancy. As mental life became more complex and various, as the things to be learned kept on multiplying, less and less could be done before birth, more and more must be left to be done in the earlier years of life."

It is evident that Mr. Fiske's theory rests upon two suppositions: first, that progress was made possible by increased infancy; second, that as intelligence kept on increasing a longer period became necessary, that the animal might adapt itself to the increasingly complex mental environment. Progress is conditioned on infancy, and increased intelligence means increased complexity of environment.

II. THE MEANING OF ENVIRONMENT

Mr. Fiske's theory can be upheld provided only we are willing to grant the implied assumption that environment may mean one thing when applied to man and something else when speaking of other forms of life; while, on the other hand, it must be evident that natural environment, similar in all aspects for all of nature's creations, is the only meaning that can be taken into consideration in a purely scientific discussion of a type demanded by a subject of this nature.

There are but two instincts with which nature is concerned and which may be called natural instincts: self-preservation and reproduction. These are the only instincts that further

her sole purpose, that of maintaining and perpetuating her creations. Nature is impartial and not at all charitably inclined. She provides the organism with weapons—one as effective for its purpose as another—and lets it fight its own battles. To say that she was kinder to man than to the rest of animal life is to attribute to her a conscious purpose, which must be considered a non-scientific assumption. And in the “struggle for existence” can be included only those elements that go to maintain life, and procure food and shelter. So with environment, whether applied to man or to any other type of life, it can include natural surroundings only, that on which depends survival. We must conclude, then, that in a purely scientific discussion of the meaning of infancy as a period of adjustment to environment the esthetic, literary, and scientific inheritance and productions of the race can not be taken into account; for with these nature is not concerned. “We can not suppose,” says Spencer, “that minor traits, exemplified among others by the aesthetic perceptions, can have been evolved by natural selection.” (The Factors of Organic Evolution.) These must be considered as the result of man’s attempt, after the dawning of intelligence, to better his conditions, and nature, “red in tooth and claw,” is not concerned with bettering the condition of any animal beyond supplying it with the necessary weapons with which to maintain itself. It is beyond scientific belief that nature planned or designed anything specifically to serve man. All nature’s creatures, including man, serve but themselves in so far as they carry out nature’s purposes.

“She (nature) lends them every power in her possession and aids them with every tool at her command. She helps sexuality by lavishing the sexes with every kind of attraction for each other. For the other instinct she supplies the weapon for defense and quick alert wits. She lavishes such care on no other instincts, which shows their super-importance. Nature’s sole purpose in all this activity is to produce, maintain, perpetuate life. She has no other purpose in view but this one. And this is as true of man as of the weed and insect. Man is held in no higher esteem by nature than is her lowest creation. One fulfills her purpose as well as the other.” So if we are to determine scientifically the causes of infancy we can not include the scientific, esthetic, or literary attainments of the race. We can take into account only natural causes working through evolution and bearing upon that part of the environment only that has a direct effect on its physical preservation.

III. MAN AND THE STRUGGLE FOR EXISTENCE

Bearing in mind the elements that constitute the environment of an organism as those upon which depends its survival, let us compare the struggle for existence of man with that of lower forms of life. For subsistence the animal needs food, shelter, and safety from danger.

Food—Man obtains his food by planning for it; the animal by chance. The competition that man meets with in his search for food is of the mildest kind compared with that of the animal. He obtains his food as the reward of labor or intelligence; the animal by its wits, physical force, and at the risk of life. The animal is in constant danger of losing its life while trying to maintain it.

Shelter—Man has shelter provided for him; the animal has to seek it or make it. His shelter is also better protection from both weather and danger than that of the animal.

Danger—In both sleeping and waking hours the animal is constantly being preyed upon and in danger of its life. "The struggle for life among the birds and other wild creatures is so severe that the feeble and malformed, or the handicapped in any way, quickly drop out. Probably none of them ever die of old age. They are cut off in their prime. . . . They are always in the enemy's country; they are always on the firing-line; eternal vigilance and ceaseless activity are the price of life with them."

"Since these birds left Canada and northern New England last October they have probably traveled over two thousand miles, beset by their natural enemies at all times and places—in fields and marshes and woods; in danger of hawks and shrikes and cats by day, and of fowls and other prowlers by night; compelled to hustle for food at all times, and to expose themselves to a thousand dangers." (Burroughs, *Old Friends in New Places*, in *Under the Apple-Trees*.) Thus the animal is struggling not only for the means with which to maintain life, but for life itself. Man is subject to no such severe conditions.

IV. INTELLIGENCE, ENVIRONMENT, AND INFANCY

It is the purpose of this paper to prove that, in agreement with Mr. Fiske's theory, increased intelligence led to and resulted in a longer period of babyhood, but that, contrary to his conclusions, not the resulting complexity of the environment but its simplification as the result of the conquests of the growing intelligence brought about this result.

Man differs from all other animals in that (1) he has the greatest intelligence, (2) he is the weakest of all animals in proportion to his size, (3) he has the longest period of infancy, a period of weakness and dependence. The same distinctive characteristics exist among no animals a stage below that of man, which seems to point to the conclusion that there must exist a definite relation, a causal relation between them; that the one gave rise to the other.

As has been previously argued, with the single exception of perpetuating life the workings of nature are purposeless and without aim. When in the course of its development the animal happens to strike upon a feature that proves of advantage in its struggle for existence, that feature becomes a permanent instrument for the purpose of adaptation. Such may have been the case with intelligence. Its appearance was accidental and its consequent development due to its advantages as a means for the conquest of environment and therefore for survival. The action of intelligence upon environment made possible the modification of the environment to suit the animal, man, and not a change in the animal, in man, to suit the changing environment. Evolution, natural selection, seized upon mind, and thus physically man stopped developing. "In the whole animal world, as we have seen, every species is preserved in harmony with the slowly changing environment by modifications of its own organs or faculties, thus gradually leading to the production of new species equally adapted to the new environment as its ancestor was before the change occurred.

In the case of man, however, such bodily adaptations were unnecessary, because his greatly superior mind enabled him to meet all such difficulties in a new and different way. As soon as his specially human faculties were developed (and we have as yet no knowledge of him in any earlier condition), he would cease to be influenced by natural selection in his physical form and structure. Looked at as a mere animal he would remain almost stationary, the changes in the surrounding universe ceasing to produce in him that powerful modifying effect which they exercise over all other members of the entire organic world." (Wallace, *Selection Modified by Mind*, in *Social Environment and Moral Progress*.)

With mind as an instrument for the conquest of environment the struggle for existence was greatly simplified. "In order to protect himself from the larger and fiercer of the mammalia he made use of weapons such as stone-headed clubs, wooden spears, bows and arrows, and various kinds of traps

and snares, all of which are exceedingly effective when families or larger groups combine in their use. Against the severity of the seasons he protected himself with a clothing of skins, and with some form of shelter or well-built house, in which he could rest securely at night, free from tempestuous rain or the attacks of wild beasts. By the use of fire he was enabled to render both roots and flesh more palatable and more digestible, thus increasing the variety and abundance of his food far beyond that of any species of the lower animals. Yet further, by the simplest form of cultivation, he was able to increase the best of the fruits, the roots, the tubers, as well as the most nutritious of the seeds, such as those of rice and maize, of wheat and barley, thus securing in convenient proximity to his dwelling place abundance of food to supply all his wants and render him almost always secure against scarcity or famine or disastrous droughts." Man thus attained, by dint of mind, a position of pre-eminence above all other animals in obtaining food and shelter, safety from danger, and even to transform that which in nature is useless into things useful and fit for consumption.

We can now state our thesis as to the relation between intelligence, environment, and infancy. With intelligence acting on the environment in the manner above described, survival no longer depended on pure physical activity, alertness, and strength; and as the implements for gaining the means for survival kept multiplying and were transferred from generation to generation, the young of succeeding generations found it less and less imperative to exert as much energy as was necessary in previous ages for the accomplishment of the same end, because of the thus simplified environment; all this resulted in the loss of former physical strength, and with the progress of the ages, this inactivity kept accumulating into a lengthening period of physical weakness or infancy. "Changed conditions," says Darwin, "induce an almost indefinite amount of fluctuating variability by which the whole organization is rendered in some degree plastic." (*Origin of Species*.) And further, "Changes of any kind in the conditions of life, even extremely light changes, often suffice to cause variability." (*Animals and Plants under Domestication*.) Speaking of domesticated rabbits he says: "The want of exercise has apparently modified the proportional length of the limbs in comparison with the body. . . . In many cases there is reason to believe that the lessened use of various organs has affected the corresponding parts in the offspring. . . . Our domestic fowls, ducks, and geese have almost lost, not

only in the individual but in the race, their power of flight; for we do not see a chicken, when frightened, take flight like a young pheasant." (The Variation of Animals and Plants under Domestication.) If this is true of physiological parts there is no reason why similar disuse of once needed physical energy will not be affected in a similar manner.

V. INFANCY AND SURVIVAL

The earliest progenitors of the human race were pressed hardest in their struggle for survival; for, besides having to conquer an environment in its rawest and rudest state, they even lacked the most rudimentary implements for the purpose. The next generations, however, due to the experiences of their predecessors, gradually found the fight less and less strenuous and dangerous and so on through the life-history of the human race up to the present when nature yields up her richest treasures and fruits with the least physical exertion of man. As mind supersedes mere physical prowess for the conquest of nature's resources necessary for the subsistence of man, physical energy is being turned into mental power and this keeps gradually manifesting itself in a constantly lengthening period of physical helplessness. The advance of civilization, especially in its scientific aspects, manifests itself primarily by the tendency to extract out of nature the means for physical maintenance and comfort with the least expenditure of energy on the part of man. It is man's special privilege, by dint of possessing a creative intelligence, to be the ruler and master of his environment and not the slave of it, as are all the lower forms of life. In his physical development he is directly influenced in no way by his physical surroundings; for his intellect enables him to maintain life in every zone, to protect himself against his immediate environment, and even to prepare for future needs. On the other hand, the mechanical means of controlling temperature, light, and the means of obtaining food, preparing foods, and engaging in activities that require little muscular exertion, all have an indirect influence on him. Under primitive conditions of life, vigor of skin, of muscles, and digestive apparatus, were the chief factors in survival; while under modern conditions varied activity of the nervous system is the only requirement. Under modern conditions, however, survival no longer depends on an adjustment to nature's forces or changes which invariably involve physical reaction, but on the contrary, man modifies his environment so as to make nature minister to his needs

and even his comforts with the least possible expenditure of his physical energy. "The discoveries of ancient and modern navigation and the domestic history or tradition of the most enlightened nations represent the human savage naked both in mind and body, and destitute of laws, of arts, of ideas and almost of language. From this abject condition, perhaps the primitive and universal state of man, he has gradually arisen to command the animals, to fertilize the earth, to traverse the ocean and to measure the heavens."

VI. CONCLUSION

It is true that infancy is a period for adjustment. It is also true that the individual needs a long time for the work of learning man's vast acquirements in the arts and the sciences. But learning and dependence are not one and the same thing. Because the human infant has a wide intellectual adjustment to make is no reason why he should be unable for a longer time than any other animal to supply the means for daily living; for we must bear in mind that, as we have shown before, the intellectual part of the environment does not concern nature. In accordance with her purposes the mastery of that environment is not necessary for the maintenance of life. Furthermore, infancy can not be the result of natural selection and have caused the conversion of brutes into human beings, as Mr. Fiske would have it, because, first, nature can not be said to have purposed the creation of man, and, second, because infancy, being a period of weakness, is against her very order of things. Nature tolerates no weakness and to maintain that she is responsible for its prolongation is to maintain that she is defeating her own purpose. In nature, "Youth is a perilous time in the life of animals. The young things, with their imperfect organs, with their relics of stages that were fitted to the environment of a remote ancestor, but are out of gear with existing conditions, are hampered with the cumbrous scaffolding of the past and can offer feeble resistance to accidents and diseases. They are a ready prey for a world of hungry enemies. It is in the first place imperative that this period of feebleness should be passed through as quickly as possible." (Mitchel, *The Childhood of Animals*.)